

In the Claims

Cancel Claims 1 – 34 (Cancelled)

35. (New) A lubricant-feed-state monitoring sensor disposed directly associated with a device fed with oily or fatty lubricant or a lubricant feed pipe for feeding lubricant to the device, for monitoring the feed state of lubricant by detecting the supply of the lubricant to the device, the sensor comprising a T-shaped member having a lubricant passage connected to the lubricant feed pipe and a detector insertion portion extending substantially vertically from a middle portion of the lubricant passage, into which a detector is inserted; wherein the detector is disposed such that a first end portion of the detector is fixed to a top portion of the detector insertion portion, and a second end portion is positioned in the lubricant passage without restraint, the detector undergoing bending deflection by displacement of the second end portion due to the flow of the lubricant, and the detector having a piezoelectric element that generates voltage by the bending deflection.

36. (New) The sensor according to claim 35, wherein the detector further comprises a heat shrinkable film made of a flexible material that coats the piezoelectric element.

37. (New) A method of monitoring a feed state of lubricant to a device fed with lubricant with a sensor mounted to the device or a lubricant feed pipe connected to the device comprising:

disposing the sensor to undergo bending deflection by lubricant flow when the lubricant is fed;

converting strain generated by the sensor due to the bending deflection to an electrical signal;

measuring peak voltage of the electrical signal by peak hold processing; and

when the peak voltage is in a predetermined range, determining that the lubricant feed state is abnormal.

38. (New) The method according to claim 37, wherein a lower threshold and an upper threshold are set for the peak voltage in advance; and when the peak voltage falls below the lower threshold, determining that the amount of lubricant has decreased or stopped, and when the peak voltage exceeds the upper threshold, determining that the part downstream from the sensor is clogged.

39. (New) The method according to claim 37, wherein, when the sensor is a piezoelectric element, capacitance of the sensor is measured after monitoring of the lubricant feed state has been started, and when the capacitance of the sensor is less than a predetermined threshold, determining that the sensor is abnormal, and abnormality due to the abnormal sensor is removed from the determination on abnormality of feed state of lubricant based on the peak voltage, on the basis of the determination on the sensor abnormality.

40. (New) The method according to claim 38, wherein, when the sensor is a piezoelectric element, capacitance of the sensor is measured after monitoring of the lubricant feed state has been started, and when the capacitance of the sensor is less than a predetermined threshold, determining that the sensor is abnormal, and abnormality due to the abnormal sensor is removed from the determination on abnormality of feed state of lubricant based on the peak voltage, on the basis of the determination on the sensor abnormality.